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SUPPLEMENT TO THE REVISION OF THE NEW  
ZEALAND POLYPLACOPHORA,  
WITH DESCRIPTIONS OF NEW SPECIES. (\*)

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(Plate ix.)

**Callochiton empleurus**, Hutton, sp.

Pl. ix, figs. 1—4.

Shell small, elongated oval, subcarinated, slopes very slightly convex, flesh-colour, with a squarish white patch on the posterior part of the jugal tract. Anterior valve (fig. 1) almost smooth, but minutely punctate; anterior margin with square white spots at irregular distances, and faint traces of radiate riblets. Posterior margin with a median notch. Intermediate valves (fig. 2). Central area minutely punctate, the jugum mostly smooth, with a few transverse shallow furrows; the pleural tracts with 9—10 deep pits on each side in front of the anterior edge of the lateral areas; these short pits become shorter and shallower towards the median part of the valve. Lateral areas raised, distinct, with well pronounced concentric ridges. Posterior valve (fig. 3) rather indistinctly minutely punctate, with a subcentral mucro, posterior slope slightly concave. Girdle (fig. 4) with characteristic minute, elongated and imbricating glossy scales. Colour of valves fleshy, lighter and with white streaks on the jugum. A white squarish spot on each intermediate valve on the posterior part of the jugum, and on the tail valve in front of the mucro. Interior pink, with the sutural laminae white. Sinus rather broad, shallow. Intermediate valves with 3 slits on each side.

Length 22, breadth 9 millim; divergence  $83^{\circ}$ .

*Hab.*—Near Stewart Island in about 15 fath.

Type in the Colonial Museum, Wellington.

A specimen was found on oysters dredged near Stewart Island by Mr. C. Cooper, of Auckland, who most kindly presented it to me. This specimen, partly rolled up, was used for giving some further information on this apparently rare species. As I did not want to disarticulate the only specimen, the number of slits in the terminal valves still remain unknown. The habitat of this species was hitherto unknown.

(\*) Vide: Proc. Malac. Soc. Lond., 1897, vol. ii, p. 183.

**Isechnochiton** (s. str.) **fulvus**, n. sp.

Pl. ix, figs. 5—10.

Shell (fig. 5) small, elongated oval, with the sides subparallel, obtusely angled, slopes flatly convex, fulvous. In size, outline and colour very much like *Lepidopleurus inquinatus*, Reeve. Anterior valve (fig. 6) with a few concentric ridges, minutely quincuncially punctate; the anterior margin white, the remainder uniformly fulvous. There is a slight posterior median notch. Intermediate valves (fig. 7) The whole surface minutely punctate like the anterior valve, with a few concentric ridges, which are more strongly developed on the lateral areas. The latter are distinctly separated from the central area by a broadly rounded edge, and there is no indication of radiate riblets. Posterior valve (figs. 8, 9) concentrically ridged and quincuncially punctate like the other valves: mucro subcentral, posterior slope slightly concave. Girdle (fig. 10) covered with very small imbricating scales of somewhat unequal size. Under the microscope they are seen to be flatly convex and deeply grooved, usually four grooves on a scale. The girdle is mostly concentrically banded with white and fulvous, two rows of scales to each band. Colour varies from light to dark fulvous, the dorsal and anterior areas being always lighter coloured. The anterior margin of the head valve, the anterior and lateral margins of the intermediate valves, and the entire margin of the tail valve have a narrow white border. Interior dirty white: sinus broad and deep, smooth. Anterior valve with 12 slits at unequal distances; intermediate valves with 1 slit on each side, posterior tooth small: posterior valve with 12 slits, the teeth unequal in breadth. All teeth are sharp and slightly grooved on the outer side.

Length 12, breadth 7 millim.; divergence  $100^{\circ}$ .

*Hab.*—Te Oneroa, Preservation Inlet and Brighton, Otago, South Island of New Zealand.

The only New Zealand *Chiton* which bears a close resemblance with this species is, as already pointed out, *L. inquinatus*, which however may at once be distinguished by the longitudinally striated intermediate valves. Dr. Torr informs me that this species also occurs in South Australian waters.

**Plaxiphora glauca**, Quoy and Gaimard, sp.

*Chiton glaucus*, Q. and G.: Voy. de l'Astrol., Zool., vol. iii, pag. 376.

Pl. lxxiv, figs. 7—11 (1835).

I have specimens, found alive, from the Chatham Islands, collected and kindly sent to me by Mr. Fougère. They agree perfectly with Tasmanian specimens. It seems rather curious that such a large shell should not have been recorded before.

**Plaxiphora** (s. str.) **murdochi**, n. sp.

Pl. ix, fig. 11.

Shell rather small, oval, slightly narrowed behind, roundly angled along the top of the valves, blackish-green, finely sculptured, intermediate valves mucronated, girdle rather narrow, of a minutely scaly appearance and with sparse hairlets. Anterior valve radiately eight ribbed, with five diverging striae, which are coarser near the anterior margin, and from elongated nodules on the posterior edges. Intermediate valves with a lighter coloured posterior mucro, the whole surface sculptured with fine striae; the lateral areas are distinctly marked off by an elevated ridge descending from the jugum and dissolving into numerous fine striae near the margins, the striae on the lateral areas and the pleural tracts are arranged in such a way that they radiate from the ridge like the webs from the shaft of a feather. The posterior margin has a row of nodules on each side, like the anterior valve. Central area with diverging riblets in front of the mucro, but straight and parallel to the jugum on the remaining surface. Posterior valve small, very slightly emarginate behind; mucro terminal, slightly raised, from the elevated postero-lateral ribs the fine riblets diverge straight in front, obliquely on the posterior side. Girdle has, viewed with an ordinary pocket lens, the appearance of being minutely scaly, but a more powerful lens reveals the fact that the whole girdle is densely and regularly pitted. Near some of the sutures I found tufts of a few light coloured bristles, and a few hairlets were found near the margin of the girdle, but it was not easy to find them. It seems most likely that the whole girdle was originally densely covered with fine, short hairlets and tufts near all the sutures, but that they are very easily rubbed off. Colour blackish-green, girdle a little darker. The anterior valve has a few concentric zigzag bands of light blue; the intermediate valves have a number of wavy, longitudinal blue streaks, running over the lateral and pleural tracts; the posterior valve has only an indistinct blue patch on each side. Interior blue, the sutural laminae white. Sinus rather narrow, straight, the sutural laminae broadly arched, short. Anterior valve with 8 slits, corresponding to the external ribs, teeth strong, broadly grooved on the outside; intermediate valves with 1 slit on each side, corresponding with the ribs of the lateral areas; posterior valve with a smooth insertion plate with a posterior median sinus, no slits.

Length 17, breadth 13 millim. : divergence 108°.

*Hab.*—Near entrance to Kawhia Harbour, on rocks at half-tide. Much exposed to very heavy seas. (R. Murdoch).

Type in my collection.

With regard to the sculpture this species stands nearest to *P. biramosa* and *caelata*, but in both of these it is much coarser. The beautiful fine sculpture, colour, and the curiously pitted girdle, when devoid of hairs, separate it at once from the two.

I have great pleasure in associating with this species the name of its discoverer, Mr. R. Murdoch, of Wanganui, who also kindly supplied the drawing of the shell.

**Acanthochites (Loboplax) rubiginosus**, Hutton, sp.

Pl. ix, figs. 12—17.

*Tonicia rubiginosa*, Hutton: Trans. N. Zeal. Inst., 1872, vol. iv, p. 180.  
(*Chiton rubiginosus*, Swains., in coll.)

*Chiton rubiginosus*, Hutton: Journ. de Conch., 1878, vol. xxxvi, p. 39.

*Tonicia rubiginosa*, Hutton: Man. N. Zeal. Moll., 1880, p. 114.

” ” Pilsbry: Man. Conch. (1), 1893, vol. xv, p. 107.

*Acanthochites (Loboplax) costatus*, Suter: Proc. Malac. Soc. Lond.,  
1897, vol. ii, p. 194, non Adams and Angas.

*Acanthochites rubiginosus*, Hutton: Index Faunae Novae Zealandiae,  
1904, p. 86.

Shell (fig. 12) oblong, small, subcarinate, the whole surface granular, mostly yellowish-pink, girdle with minute spines and sutural tufts. Anterior valve (fig. 13) with five ribs which are not very conspicuous, the whole surface granulated, the granules being largest, and sometimes unequal in shape, near the margin, and decreasing in size towards the apex of the valve, which is slightly sinuated. Intermediate valves (fig. 14) with the jugum sparsely longitudinally substriated; the pleural tracts are granular; the lateral areas, but slightly raised and not very clearly separated from the pleural tracts, are similarly sculptured, the granules being again largest near the margin, round or oval in shape. The valves are subcarinate, beaked posteriorly. Posterior valve (figs. 15, 16) small, the mucro central, with a smooth triangular area in front, beyond which the whole surface is granular, the granules being comparatively large. Posterior slope concave, no signs of radiating ribs. Girdle (fig. 17) thick, fleshy, beset with microscopic white spicules; there are sutural tufts of white spicules, 7 on each side, and 4 tufts in front of the head valve. Colour.—This is, as I pointed out in my former paper, variable, adult specimens showing mostly a pinkish colour, yellowish on the back, but young shells sometimes have a most beautiful colour arrangement, the granules being white, pink, light brown and light blue. The jugal tract is in the intermediate and tail valves of a darker colour, mostly reddish-brown and assuming a triangular shape. The girdle is light fulvous with small patches and radiate bands of whitish-yellow. Interior white, but the centre of the valves, head valve excepted, is pink coloured; the sinus is rather narrow and deep. The anterior valve with 5 slits, corresponding with the ribs; intermediate valves with 1 slit on each side, strong teeth, and a stout valve-callous; posterior valve with a low, thick insertion plate and 4 short slits.

The figured specimen has: Length 17, breadth 13 millim.; divergence

*Hab.*—Cook Straits, Foveaux Straits, in the latter locality in about 15 fath.

Type in the Colonial Museum, Wellington.

At the end of 1898 Dr. Pilsbry very kindly brought the fact under my notice that my *A. costatus* was not the same as the Australian shell, and that it had to be called *A. rubiginosus*, Hutton. Being unable to procure a specimen of *A. costatus*, Mr. Etheridge, jun., Curator of the Australian Museum, Sydney, informing me that only two specimens had ever been found, and that it was unknown to Australian collectors, I now proceed to point out the difference of the two species from Smith's diagnosis in Man. Conch.—*A. costatus* is more elongated and narrower than *A. rubiginosus*, the respective ratios being 1 : 2, 6 and 1 : 1, 3. *A. costatus* has the lateral areas well defined by a raised keel, which is absent in *rubiginosus*. The posterior valve of *costatus* has six radiating ridges and the insertion plate with 6 notches, against no ridges and and 4 slits in *rubiginosa*. The colour of *costatus* is pale brown, whilst *rubiginosus* is sometimes beautifully coloured, producing quite a kaleidoscopic aspect, as Dr. Torr correctly expressed himself when I lately showed him some specimens in my collection.

**Chiton quoyi**, Desh., n. sub-sp. **limosa**.

*Chiton areus*, Suter: Proc. Malac. Soc. Lond., 1897, vol. ii, p. 195,  
non Reeve.

When I wrote the Revision of the New Zealand Polyplacophora in 1897 I had not seen the true *C. areus*, Reeve, which seems to be a very rare species. I sent a specimen of my supposed *areus* to Dr. Pilsbry in 1898, and he told me that it was only a slight form of *C. quoyi*, not specifically distinct, and not the true *areus*. I also sent specimens to Mr. E. R. Sykes, of London, asking him to kindly compare it with the type specimen in the British Museum. With his usual obliging readiness he sent me the following information: "If the specimen, presumably type, in the Brit. Mus. can be trusted, your Chitons are not, I think, *areus*: the sculpture on that species is much stronger and coarser on the median areas, i.e. more like that of *canaliculatus*. The Museum *areus* is larger—nearly twice the size—and of an olivaceous green." A few years later I received some specimens of a *Chiton* from Mr. Murdoch, Wanganui, which he had found near Cape Egmont, and these proved to be the true *C. areus*, Reeve. It is indeed very different from my supposed *areus*, which I now class as a sub-species of *C. quoyi*, Desh. It differs from the species in being smaller and narrower, the jugum angled, not carinated, not always smooth, colour yellowish to green, mostly coated with blackish-green. Anterior valve with 8, posterior valve with 15 slits, divergence about 100°, against 120° in the species.

Length 20, breadth 12 millim.

*Hab.*—Under stones on mud-flats in Manukan and Auckland Harbours.

Type in my collection.

**Chiton aereus**, Reeve.

This species belongs to what I will call the *canaliculatus* group, having a coarse sculpture and the central area with strong longitudinal ribs and grooves. Also *C. stungai*, Reeve and *C. limans*, Sykes, are to be included in this group. *C. aereus* may at once be separated from the others by the longitudinal furrows of the pleural tracts being rubbed off in the middle, not unlike those in *Callochiton empleurus*, where however they are much shorter.

In my specimens the surface of the valves is microscopically shagreened, the girdle has mostly a few radiate white bands on the sides, and the scales are faintly striate. There occurs a red variety, sometimes yellowish-red, as in a specimen found by Miss Mestayer at Lyall Bay, or bright cinnabar red, as in a specimen I found in Hauraki Gulf. This latter specimen is also banded with white on the girdle, and the lateral areas of valves 3—5 are clouded with light black.

*Hab.*—Cape Egmont, west coast of North Island (R. Murdoch); Lyall Bay (Miss Mestayer); Hauraki Gulf (H. S.).

**Chiton huttoni**, Suter.

This species will be described and figured in *Trans. N. Zeal. Inst.*, vol. xxxviii, to be published in 1906. This species also belongs to the *canaliculatus* group, its usual colour is yellowish-olive, but a brick-red variety is also met with.

**Acanthopleura (Maugeria) granulata**, Gmelin, sp.

*Chiton granulatus*, Gmelin: *Syst. Nat.*, 1790, vol. iii, pl. 16, p. 3205.

*Acanthopleura (Maugeria) granulata*, Pilsbry: *Man. Conch.* (1), 1893, vol. xiv, p. 227, pl. lx.

“ ” *corticata*, Suter: *Proc. Malac. Soc. Lond.*, 1897, vol. ii, p. 198, figs. 12—17 in text.

At the request of Dr. Pilsbry I sent him the valves and denuded girdle of *A. corticata*, Hutton, for examination, and I was greatly astonished on receiving from him the following information:—“*A. corticata*, Hutton, is merely a specimen of *A. granulatus*, Gmelin, of the West Indies. That species varies a good deal, and we have valves exactly like yours. By using the key on page 217 of *Manual* you would have brought your specimen to that species.” That is quite true, but even if I had found it to be *A. granulata* I would certainly have doubted the correctness of my identification, for who would look for a West Indian Chiton in New Zealand? However, Dr. Pilsbry is right. There is now a fine, perfect specimen in the Colonial Museum, Wellington, which perfectly corresponds with specimens from the West Indies kindly presented to me by Dr. Pilsbry.

Another mollusc we share with the West Indies is *Pecten medius*, Lamk., of which our *P. laticostatus*, according to Hedley, is a synonym.

